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The Future of Innovation

TRADE SECRETS, PROPERTY RIGHTS, AND PROTECTIONISM—AN AGE-OLD TALE*

Innovation makes enemies of all those who prospered under the old regime, and only lukewarm support is forthcoming from those who would prosper under the new. Their support is indifferent partly from fear and partly because they are generally incredulous, never really trusting new things unless they have tested them by experience.¹

INTRODUCTION

The forces that Machiavelli described over half a millennium ago continue to shape our world of innovation today.² Through recent common-law and statutory developments favoring industry, the power of the old is holding back the development of the new. Although the Constitution gives the federal government the power to control these forces for the betterment of society,³ the current trade secret framework concentrates too much power in the hands of industry, threatening innovation by allowing industrialists to “steer evolution as it benefits them.”⁴

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¹ NICCOLÒ MACHIAVELLI, *THE PRINCE* 17 (W.W. Norton 2d ed. 1992) (1515).

² *See id.*

³ *See* U.S. CONST. art. I, § 8, cl. 8. The Constitution gives Congress the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries[.]” *Id.* The Supreme Court has repeatedly articulated that the policy goals surrounding both copyright and patent law are to benefit society, not industry. *See, e.g.,* *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (“The immediate effect of our copyright law is to secure a fair return for an ‘author’s’ creative labor. But the ultimate aim is, by this incentive, to stimulate artistic creativity for the general public good.”); *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932) (“The sole interest of the United States and the primary object in conferring the monopoly lie in the general benefits derived by the public from the labors of authors.”).

⁴ LAWRENCE LESSIG, *THE FUTURE OF IDEAS* 264 (2001) (“That power is not within our tradition. It is not what has built the America we admire.”).

This Note argues that developments in the area of trade secret law have swung the pendulum too far in the direction of industry. By rooting trade secret law in an intellectual property based rationale, both the common law and recent Congressional enactments have expanded trade secret law well beyond its original parameters. This expansion is unfortunate, both from a theoretical and practical vantage point: aside from drawing false analogies to patent and copyright law, this new regime is causing society to suffer by unduly constricting the spread of useful and innovative ideas. Instead, this Note contends that the pendulum must swing back in the favor of society in order for trade secret law to serve the constitutionally mandated policy goals that intellectual property laws purport to serve.⁵ To achieve this objective, this Note proposes two solutions that may help to equilibrate industry's interests with those of society.

This Note proceeds as follows: Part I summarizes the current law of trade secrets. Part II illustrates how the pendulum has swung too far in the favor of industry, with Part II.A outlining the Supreme Court's adoption of a traditional intellectual property rationale and Part II.B explaining the reasoning and legislative history behind the Economic Espionage Act (EEA), a statute that imposes criminal sanctions for the theft of trade secrets. Part III illustrates some of the major deficiencies in the law, both theoretical and practical, and utilizes practical examples to demonstrate the problems in the current trade secret framework that have been exacerbated by the EEA. Finally, Part IV proposes two solutions to help swing the pendulum back towards the constitutionally mandated policy goal of benefiting society.

I. TRADE SECRETS: BACKGROUND

A. *Fundamentals of Trade Secret Law*

The central purpose of trade secret law is to protect secret and commercially valuable information from being misappropriated. Just about everyone has heard of the famous formula for Coca-Cola,⁶ or the eleven secret "herbs and spices"

⁵ See U.S. CONST. art. I, § 8, cl. 8; see also *supra* text accompanying note 3.

⁶ See *Coca-Cola Bottling Co. of Shreveport, Inc. v. Coca-Cola Co.*, 107 F.R.D. 288, 289 (D.C. Del. 1985).

that make KFC's chicken so tasty.⁷ Trade secret law protects important formulas like these as well as other commercially valuable information.

Although trade secret doctrines vary throughout jurisdictions, there is a general consensus that to establish liability for trade secret misappropriation, a plaintiff must show that the information at issue is a "trade secret"⁸ and that the defendant acquired, used, or disclosed the information in breach of confidence or by other improper means.⁹

There are three basic requirements for something to qualify as a trade secret: the object at issue must be "information";¹⁰ that information must confer a competitive value because it is secret;¹¹ and that information must be maintained under reasonable safeguards in order to assure secrecy.¹² The "information" requirement is extremely broad in scope. In contrast to other traditional intellectual property fields, such as copyrights and patents, trade secrets can protect technical and non-technical information, expression or ideas, and even facts. Its protective cloak has been extended to cover such things as financial information, methods of doing business, customer lists, supplier lists, future marketing tactics, sales and product plans, employee names, and even phone numbers.¹³

The requirement that "the information be of economic value because it is secret" merely requires that the information confer a potential economic advantage to the holder over competitors. Almost anything can qualify provided that it helps

⁷ See Gina White, Note, *Intellectual Property—Trade Secret Law— Is the Arkansas Supreme Court Following Other Jurisdictions Down the Wrong Road in Analyzing Combination Trade Secrets?*, 25 U. ARK. LITTLE ROCK L. REV. 407, 407 n.2 (citing About KFC, Original Recipe Is Still a Secret, at <http://www.kfc.com/about/secret.html> (last visited April 20, 2005)).

⁸ Forty-two states and the District of Columbia have adopted the Uniform Trade Secret Act's (UTSA) definition of a trade secret. Although New York and a few others have not, the common-law is very similar to the nuts and bolts of trade secret law. See C. Rachal Pugh, *Nondisclosure Agreement Protected Confidential Information Which Did Not Qualify for Trade Secret Protection*, 17 BERKELEY TECH. L. J. 231, 235 (2002).

⁹ See UNIF. TRADE SECRETS ACT § 1(1), 14 U.L.A. 433 (1985).

¹⁰ See *id.* at § 1(4). This is a rather broad requirement and one of the major benefits of trade secret law as opposed to copyright, which only protects expressions, not ideas, and patents, which require novelty.

¹¹ See 1 ROGER M. MILGRIM ON TRADE SECRETS § 1.02 (1998).

¹² Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CAL. L. REV. 241, 248 (citing MILGRIM, *supra* note 11, §§ 1.03-1.04).

¹³ *Id.* (citing 1 MILGRIM, *supra* note 11, § 1.09).

to create commercial value.¹⁴ In fact, that information does not even need to be in use to be protected. The Restatement (Third) of Unfair Competition¹⁵ (“Restatement Third”) protects trade secrets that can *potentially* be used.¹⁶ This means that it does not require actual and continuous “use” by the creator to qualify as a trade secret—for instance, results of research that are not used directly in one’s business may qualify as trade secrets under this definition.

“Secrecy” has been defined by courts as any information that is not known or easily ascertainable through proper means by a firm’s competitors. “Proper means” commonly include things such as reverse engineering (obtaining a finished product and taking it apart in an attempt to discover its secret of operation) or independent discovery through factual knowledge already in the public domain.

The final requirement to qualify as a trade secret—reasonable precautions to maintain the secrecy—is adjudged according to an objective “reasonableness” standard. Although a trade secret holder need not take all possible precautions to satisfy this standard, many companies go to great lengths to assure this element is met so that the adequacy of their measures will not be second-guessed in court. To protect their interests, companies may take various steps, such as: disclosing the secret only under a confidentiality agreement and on a need-to-know basis, constructing fences or walls to block the public’s view, instituting a system of building security, using passwords, requiring entry and exit interviews of employees, and restricting employee access to sensitive areas.¹⁷

Once something qualifies as a trade secret, a defendant’s liability turns on whether the defendant acquired, used, or disclosed the information by improper means.¹⁸

¹⁴ See 1 MILGRIM, *supra* note 11, § 1.09 (listing several different categories that have been protected).

¹⁵ RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39-45 (1995).

¹⁶ See Patricia A. Meier, Note, *Looking Back and Forth: The Restatement (Third) of Unfair Competition and Potential Impact on the Texas Trade Secret Law*, 4 TEX. INTELL. PROP. L. J. 415, 455 (1995-1996).

¹⁷ See Bone, *supra* note 12, at 249; Vincent Chiappetta, *Myth, Chameleon or Intellectual Property Olympian? A Normative Framework Supporting Trade Secret Law*, 8 GEO. MASON L. REV 69, 77 (1999).

¹⁸ Improper means may include: breach of contract, violation of a confidential relationship, bribery, theft, misrepresentation, and other wrongs. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 475-76 (1974); UNIF. TRADE SECRETS ACT § 1(1) (1985).

“Improper” has been defined by the Restatement Third to include “theft, fraud, unauthorized interception of communications, inducement of or knowing participation in a breach of confidence, and other means either wrongful in themselves or wrongful under the circumstances of the case.”¹⁹ There is, however, much room for judicial discretion here, especially when the conduct seems unethical.²⁰ Yet a proper acquisition, such as independent creation, reverse engineering, or acquisition from a public source, is always an absolute defense.²¹

Even once all of these elements are established, the owner generally does not receive a monopoly in the idea or process that encompasses the secret; instead, trade secret law only protects the secret from being discovered improperly.²² If the plaintiff can establish liability, the court usually issues an injunction and follows with a monetary award of provable damages.²³

The civil law of trade secrets has been codified under a number of different uniformed schemes—most recently, the Restatement Third,²⁴ and Uniform Trade Secret Act (UTSA).²⁵ An owner of a trade secret can also pursue federal criminal sanctions against a person who misappropriates his/her secret ideas.

¹⁹ See UNIF. TRADE SECRETS ACT § 43 (1985).

²⁰ See *E.I. duPont deNemours Powder Co. v. Christopher*, 431 F.2d 1012, 1017 (5th Cir. 1970) (“Improper will always be a word of many nuances, determined by time, place, and circumstances. We therefore need not proclaim a catalogue of commercial improprieties.”).

²¹ These exceptions are not explicitly listed in the UTSA; however, courts have found them to be implied under the element of secrecy. See Chiappetta, *supra* note 17, at 78 n.53.

²² However, it is the contention of this Note that in certain circumstances trade secret owners are in fact granted a de facto monopoly. This situation occurs most often when an invention is difficult to reverse engineer, such as an innovation involving chemical compounds. See *infra* Part III.B.

²³ See Chiappetta, *supra* note 17, at 79. It is important to take note that this is merely a general overview of trade secret law, meant only to provide the necessary background information for the discussion that is to follow. Trade secret law can be a highly nuanced and varying form of law from state to state, so it is important for a practitioner to perform an intensive search through jurisdictional case law where the litigation is to take place. See MILGRIM, *supra* note 11, §1.01.

²⁴ RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39-45 (1995).

²⁵ See UNIF. TRADE SECRETS ACT § 1(1) (1985).

B. The Economic Espionage Act of 1996: Federal Criminal Sanctions for Trade Secret Theft

In addition to civil liability, the EEA created federal criminal liability for anyone caught stealing a trade secret.²⁶ While trade secret law was developing on the civil side, it was argued that a large gap was forming in the effectiveness of criminal laws protecting the investment of industry in research and development.²⁷ As the technological age arrived, industrial espionage, also referred to as “economic espionage,” was reportedly on the rise. Although industrial espionage and the stealing of trade secrets had transpired for hundreds of years,²⁸ it was argued that the stakes had never been so high²⁹ and the means never so elaborate.³⁰ In response, Congress passed the EEA.³¹

Liability under section 1831, entitled Economic Espionage, requires that the theft of trade secrets “benefit a[] foreign government, foreign instrumentality, or foreign agent”³² The term “misappropriation of trade secrets” covers (1) outright theft,³³ (2) unauthorized duplication,³⁴ (3) trafficking in

²⁶ Economic Espionage Act, 18 U.S.C. §§ 1831-1839 (2000).

²⁷ James H.A. Pooley et al., *Understanding the Economic Espionage Act of 1996*, 5 TEX. INTELL. PROP. L. J. 177, 178 (1997).

²⁸ See JACQUES BERGIER, *SECRET ARMIES: THE GROWTH OF CORPORATE AND INDUSTRIAL ESPIONAGE* 3 (Harold J. Salemson trans., 1969) (telling the popular account of the Chinese princess that hid silk worms in her hat 1,500 years ago, thus supplying the secret of silk manufacture to India).

²⁹ See Robert C. Van Arnem, Comment, *Business War: Economic Espionage in the United States and the European Union and the Need for Greater Trade Secret Protection*, 27 N.C. J. INT'L L. & COM. REG. 95, 97-98 nn.26-28 (2001). The estimated loss by the top U.S. companies due to industrial espionage by foreign nations was estimated to be \$45 billion in 2001. The number of jobs lost to industrial spying was estimated at 6 million. The incidents usually take place between the economically competitive nations, such as, China, the United States and the member nations of the European Union. *Id.*

³⁰ *Id.* at 99 (“[T]he French intelligence agency recently disclosed that it had bugged hotel rooms and the first-class cabins of Air France jets and substituted spies for flight attendants to eavesdrop on visiting foreign executives.”).

³¹ Economic Espionage Act, Pub. L. No. 104-294, 101(a), 110 Stat. 3488-3490 (1996) (codified at 18 U.S.C. §§ 1831-1839 (2000)).

³² Economic Espionage Act, 18 U.S.C. § 1831(a) (2000).

³³ 18 U.S.C. § 1831(a)(1) (2000) (“[S]teals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains a trade secret . . .”).

³⁴ 18 U.S.C. § 1831(a)(2) (2000) (“[W]ithout authorization copies, duplicates, sketches, draws, photographs, downloads, uploads, alters, destroys, photocopies, replicates, transmits, delivers, sends, mails, communicates, or conveys a trade secret[.]”).

stolen trade secrets,³⁵ (4) attempted theft, duplication, or trafficking,³⁶ and (5) conspiracy to commit any theft, duplication, or trafficking.³⁷ The EEA also imposes a *scienter* requirement.³⁸

Section 1832, entitled Theft of Trade Secrets, is aimed at domestic thieves.³⁹ It is essentially the same as section 1831, but includes three additional elements: (1) the intended benefit realized must be economic in nature;⁴⁰ (2) the thief must intend or know that the offense will injure the rightful owner;⁴¹ and (3) the stolen information must be “related to or included in a product produced for or placed in interstate or foreign commerce.”⁴²

Because one of the major motivating forces behind the passage of the EEA was foreign acts of industrial espionage,⁴³ penalties are commensurately harsher for someone who intentionally or knowingly stole a trade secret to “benefit any foreign government, foreign instrumentality, or foreign agent.”⁴⁴

II. THE CURRENT STATE OF TRADE SECRET LAW: AN INTELLECTUAL PROPERTY RATIONALE

The current state of trade secret law, as represented by the seminal U.S. Supreme Court decisions of *Kewanee Oil Co. v. Bicron Corp.*⁴⁵ and *Ruckelshaus v. Monsanto Co.*,⁴⁶ and embodied in the Restatement Third, is a framework that draws

³⁵ 18 U.S.C. § 1831(a)(3) (2000) (“[R]eceives, buys, or possesses a trade secret, knowing the same to have been stolen or appropriated, obtained, or converted without authorization . . .”).

³⁶ 18 U.S.C. § 1831(a)(4) (2000) (“[A]ttempts to commit any offense described in any of paragraphs (1) through (3) . . .”).

³⁷ 18 U.S.C. § 1831(a)(5) (2000) (“[C]onspires with one or more other persons to commit any offense described in any of paragraphs (1) through (3), and one or more of such persons do any act to effect the object of the conspiracy . . .”).

³⁸ 18 U.S.C. § 1831(a) (2000).

³⁹ 18 U.S.C. § 1832 (2000).

⁴⁰ 18 U.S.C. § 1832 (2000) (noting defendant must intend to convert trade secret to economic benefit of someone other than owner).

⁴¹ 18 U.S.C. § 1832(a) (2000) (indicating defendant must intend or know threat will injure owner of trade secret).

⁴² 18 U.S.C. § 1832(a) (2000).

⁴³ See 142 CONG. REC. S 12,211-12 (1996) (discussing the failure of the current law to ensure the safety of corporations’ valuable research and development from foreign acts of industrial espionage); see also H.R. REP. NO. 104-788, at 6 (1996).

⁴⁴ 18 U.S.C. § 1831 (2000).

⁴⁵ 416 U.S. 470 (1974).

⁴⁶ 467 U.S. 986 (1984).

from property rights⁴⁷ rationale akin to that supporting copyright and patent law. Although this modern construct is vastly different than the early common law's Lockean conception of trade secret law, this evolution did not take place overnight. The process was incremental—trade secret law's original foundation was slowly whittled away and eventually replaced by economic policy goals commonly articulated for traditional forms of intellectual property, i.e., copyright and patent law.

A. *The Current State of Trade Secret Law: From Kewanee to Monsanto—the Move to a Property Rights Framework and a Traditional Intellectual Property Rationale*

Kewanee and *Monsanto* are seminal decisions in trade secret jurisprudence that represent the law's current rooting in an intellectual property rights regime.

In *Kewanee*, the Court had to decide whether Ohio's trade secret laws were void under the Supremacy Clause because they stood as an obstacle to the execution of the purposes and objectives of federal patent laws.⁴⁸ The petitioner, Harshaw Chemical Co. (Harshaw), developed certain processes that aided in the growth of a 17-inch synthetic crystal that was useful in the detection of ionizing radiation. The respondents were former employees of Harshaw who had signed agreements not to disclose trade secrets obtained as employees. They left Harshaw and joined the newly created Bicron Corp. (Bicron), a competitor. Soon after, Bicron also grew a 17-inch crystal. Harshaw brought a diversity action seeking injunctive relief and damages for misappropriation of trade secrets.⁴⁹ The District Court, applying Ohio trade secret law, granted a permanent injunction.⁵⁰ The Court of Appeals reversed on the ground that Ohio's trade secret law conflicted with federal

⁴⁷ The term "property right" is generally used to describe a package of distinct entitlements granted to an individual, sometimes referred to as a "bundle of rights." Property involves legal relationships "among people regarding control and disposition of valued resources." JOSEPH WILLIAM SINGER, INTRODUCTION TO PROPERTY 2 (2001). When someone is said to have a "property right" in something, the legal implications and consequences can be quite different than if their interest were protected by contract or tort law. This distinction will be explored in greater detail throughout this Note.

⁴⁸ *Kewanee*, 416 U.S. at 470.

⁴⁹ *Id.*

⁵⁰ *Id.*

patent laws.⁵¹ Since Ohio used the same trade secret definition adopted by the Restatement (First) of Torts and used by a majority of states at the time, the Supreme Court essentially held the fate of trade secret law in its grasp.

Holding that Ohio's trade secret law was not preempted by the federal patent law, the Court articulated a rationale for trade secret law that was synonymous with patent and copyright law. Although it stated two policy goals—"the maintenance of standards of commercial ethics and the encouragement of invention"⁵²—the incentive-based policy argument of encouraging innovation won the day.⁵³ The Court in *Kewanee* adopted a policy rationale for trade secrets analogous to the economic rationale that supported limited monopolies in copyrights and patents.⁵⁴ Essentially, trade secrets were believed to enhance the incentive to create, thereby benefiting society.

Following *Kewanee*, the Court in *Monsanto*.⁵⁵ further affirmed that trade secret law was now being viewed as a form of intellectual property. In *Monsanto*, an applicant for registration of a pesticide brought suit to avoid the data-disclosure requirement created by the Federal Insecticide, Fungicide, and Rodenticide Act of 1972 (FIFRA).⁵⁶ Monsanto sought injunctive and declaratory relief alleging that FIFRA effected a "taking" of property without just compensation in violation of the Fifth Amendment.⁵⁷ The trial court declared the challenged provisions of the act unconstitutional and permanently enjoined the EPA from implementing or enforcing it.⁵⁸ The Supreme Court, in reviewing the trial court's decision, did not hold FIFRA unconstitutional, but did hold that Monsanto's trade secret right was a "property right protected by the Takings Clause of the Fifth Amendment."⁵⁹

⁵¹ *Kewanee Oil Co. v. Bicron Corp. et al.*, 478 F.2d 1074, 1086 (6th Cir. 1972).

⁵² *Kewanee*, 416 U.S. at 481.

⁵³ See Bone, *supra* note 12, at 262 (citing *Kewanee*, 416 U.S. at 482, 484; *American Can Co. v. Mansukhani*, 742 F.2d 314, 329 (7th Cir. 1984); RICHARD POSNER, *ECONOMICS OF JUSTICE* 244 (1981); Christopher Rebel J. Pace, *The Case for a Federal Trade Secrets Act*, 8 HARV. J.L. & TECH. 427, 435-42 (1995)).

⁵⁴ See 416 U.S. at 481 (stating that one of the broadly stated policies behind protecting secret information was to motivate creation).

⁵⁵ 467 U.S. 986 (1984).

⁵⁶ Federal Environmental Pesticide Control Act of 1972, 86 Stat. 973 (1972).

⁵⁷ *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 986 (1984).

⁵⁸ *Monsanto Co. v. Acting Adm'r, U.S. EPA*, 564 F. Supp. 552 (E.D. Mo. 1983).

⁵⁹ *Monsanto*, 467 U.S. at 1003-04.

The Court found many justifications for granting Monsanto a property right in its secret formula. First, the Court utilized the Lockean concept of natural rights to support its contention. Citing FIFRA's legislative history, the Court pointed to the fact that Congress recognized that data developers had a "proprietary interest"⁶⁰ in their data and that they were "entitled to 'compensation' because they 'have legal ownership of the data.'"⁶¹ The Court argued that this "perception of trade secrets as property is consonant with a notion of 'property' that extends beyond land and tangible goods and includes the products of an individual's 'labour and invention.'"⁶² Essentially, the Court was arguing that Congress intended the information to be protected as property as a reward for hard work. The Court utilized the Lockean concept that labor created rights in "property" to strengthen its argument that trade secret holders should have property rights.

In addition, the Court reasoned that trade secrets had characteristics synonymous with tangible forms of property. As Justice Blackmun, writing for the majority, explained: "A trade secret is assignable. A trade secret can form the *res* of a trust, and it passes to a trustee in bankruptcy."⁶³ Thus, he concluded that "[t]rade secrets have many of the characteristics of more tangible forms of property."⁶⁴ As a result, the Court held that Monsanto had a property right that was protected by the Takings Clause of the Fifth Amendment.⁶⁵

The Court's broad definition of property rights in trade secrets protected industry in several respects, most notably in avoiding making disclosures to regulatory agencies when the product of that disclosure was deemed a trade secret. Most recently, in *Phillip Morris, Inc. v. Reilly*,⁶⁶ cigarette manufacturers claimed that the Massachusetts Disclosure Act (MDA),⁶⁷ which required them to disclose their ingredient lists to the state, constituted an unconstitutional taking of their property. Citing *Monsanto*, the cigarette manufacturers

⁶⁰ *Id.* (quoting S. Rep. No. 95-334, at 32 (1977)).

⁶¹ *Id.* (quoting H. R. Conf. Rep. No. 95-1560, at 29 (1978)).

⁶² *Id.* at 1003.

⁶³ *Id.* at 1002.

⁶⁴ *Monsanto*, 467 U.S. at 1002.

⁶⁵ *Id.* at 1003-04.

⁶⁶ 312 F.3d 24 (1st Cir. 2002).

⁶⁷ See MASS. GEN. LAWS ch. 94, § 307B (2002).

contended that their ingredient lists were trade secrets and hence property protected by the Takings Clause. They argued that mandatory public disclosure of those trade secrets essentially destroyed their value, thereby effecting a taking. The First Circuit agreed, reiterating the property concept set forth in *Monsanto* repeatedly throughout the decision. The court reasoned that “[s]pecific laws simply cannot destroy *property interests*.”⁶⁸ It was clear to the court “that the tobacco companies ha[d] a *property interest* in their trade secrets”⁶⁹ and, since the MDA transformed their “*private property* into *public property* without compensation”⁷⁰ it was a clear taking under the Fifth Amendment.

Beyond these judicial decisions, the Restatement Third codifies trade secret law’s relatively recent shift to a property regime. It recognizes that trade secret law has adopted the policy goals for copyright and patent law, explaining that trade secret protection is justified “as a means to encourage investment in research by providing an opportunity to capture the returns from successful innovations.”⁷¹

This incentive-based argument reasons that protecting knowledge and ideas encourages the creation of more such innovations, thereby benefiting society as a whole.⁷² Since knowledge and ideas are intangible objects that are both non-rivalrous (i.e., one person’s consumption does not reduce the availability of the good to others), and non-excludible (i.e., it is difficult to exclude others from enjoying their benefits), reproduction of an idea is potentially limitless. However, researching and developing new ideas is very expensive. Hence, economic scholars argue that protection is necessary to prevent people from free-riding off of others’ valuable investment of time and money. This incentive-based argument has supported copyright⁷³ and patent law⁷⁴ for quite some time and is the principal rationale supporting trade secrets today.⁷⁵

⁶⁸ *Phillip Morris*, 312 F.3d at 32 (emphasis added).

⁶⁹ *Id.* at 32-33 (emphasis added).

⁷⁰ *Id.* at 32 (emphasis added) (citing *Webb’s Fabulous Pharmacies, Inc. v. Beckwith*, 449 U.S. 155, 164 (1980)).

⁷¹ RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. a (1995).

⁷² See Bone, *supra* note 12, at 262 (citing ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 112-16, 135-49 (1988)).

⁷³ See generally William M. Landes & Richard Posner, *An Economic Analysis of Copyright Law*, 18 J. LEG. STUD. 325-63 (1989) (applying the rationale to copyright law).

By importing the policy rationale from patent and copyright law, trade secret law implicitly adopts their restrictions as well. That is to say, if the law of trade secrets were to restrict innovation it would contradict its own policy goals and frustrate the goals of patent law as well. It would further be a violation of the Supremacy Clause. The Constitution gives Congress the power to “promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries[.]”⁷⁶ The Supreme Court has repeatedly articulated that the purpose and objective of federal patent law is to benefit society by stimulating and encouraging innovation. As far back as 1832, in *Grant v. Raymond*,⁷⁷ the Court explicitly stated this policy goal:

[I]t cannot be doubted that the settled purpose of the United States has ever been, and continues to be, to confer on the authors of useful inventions an exclusive right in their inventions for the time mentioned in their patent. It is the reward stipulated for the advantages derived by the public for the exertions of the individual, and is intended as a stimulus to those exertions.⁷⁸

Inventors are given patents, or property rights, in their inventions as a reward “for the advantages derived by the public,”⁷⁹ and to stimulate more inventions for the public good. If trade secret law frustrated this purpose it would be void under the Supremacy Clause. The Court’s seminal decision in *Kewanee* held that Ohio’s trade secret law did not frustrate this purpose. In doing so, however, it moved trade secret law towards the intellectual property regime. Next, *Monsanto* protected trade secrets as property under the Fifth Amendment’s Takings Clause. The Restatement Third reinforces the fact that trade secrets are now characterized as a

⁷⁴ See generally Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEG. STUD. 247 (1994) (applying the rationale to patent law)).

⁷⁵ See Bone, *supra* note 12, at 262 (citing *Kewanee*, 416 U.S. at 482, 484; *American Can Co. v. Mansukhani*, 742 F.2d 314, 328 (7th Cir. 1984)); RICHARD POSNER, *ECONOMICS OF JUSTICE* 244 (1981); Christopher Rebel J. Pace, *The Case for a Federal Trade Secrets Act*, 8 HARV. J.L. & TECH. 427, 435-42 (1995)).

⁷⁶ See U.S. CONST. art. I, § 8, cl. 8.

⁷⁷ 31 U.S. 218 (1832).

⁷⁸ *Id.* at 241-42.

⁷⁹ *Id.*

form of intellectual property with liability centered on a violation of the owner's "property right."⁸⁰

These most recent codifications further demonstrate that this new direction has shifted the law to the benefit of industry. In several respects, the Restatement Third has expanded trade secret protection beyond the safeguards originally developed in the Restatement (First) of Torts. First, the actual and continuous "use" requirement in the Restatement (First) of Torts⁸¹ has been expanded to include "potential use," protecting the results of research that are not directly used by the business.⁸² Second, it defines the misappropriation element more broadly than in previous formulations of the law. No longer is use or disclosure of the trade secret required for liability; merely acquiring the trade secret "improperly" is enough to establish liability.⁸³ This expansion has proven to be particularly valuable for industries characterized by rapid and often ephemeral technological developments, such as computers, software, biotechnology, and pharmaceuticals.⁸⁴

But this is not the whole story. As the law expanded on the civil side, and the conceptualization of trade secrets shifted towards that of traditional forms of intellectual property, Congress passed the EEA, a law that greatly increased the safeguards afforded to industry.

B. *The Economic Espionage Act of 1996: A Tool of Industry*

As the common law offered greater protection to industry, Congress further bolstered these protections by enacting the EEA. This recent evolution in the law of trade secrets has supplied owners with a very powerful weapon to guard their intangible interests. The passing of the EEA helped

⁸⁰ RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. b (This "property rationale emphasizes the nature of the appropriated information, especially its value and secrecy."). Furthermore, "[c]ommentators have argued that the [UTSA], in force in 42 states, adopts a view of trade secrets as property." Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1042 n.45 (2005) (citing Lynn C. Tyler, *Trade Secrets in Indiana: Property vs. Relationship*, 31 IND. L. REV. 339, 339 (1998)).

⁸¹ See RESTATEMENT (FIRST) OF TORTS § 757 (1939).

⁸² See Meier, *supra* note 16, at 455.

⁸³ See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40, cmt. b (1995).

⁸⁴ Meier, *supra* note 16, at 454-55 (citing Holly Emrick Svetz, Note, *Japan's New Trade Secret Law: We Asked for It—Now What Have We Got?*, 26 GEO. WASH. J. INT'L L. & ECON. 413, 414 (1992)).

change trade secrets from what was once thought of as a supplemental system, catching ideas and inventions that fell through the grasps of patent law, into a system grounded in property rights that constricts the flow of ideas through criminal sanctions. It has effectively swung the pendulum directly towards the interests of industry.

Despite its lofty goals, the EEA is a bill that was clearly sponsored by, and passed to benefit, big business. In the early 1990s, big business created an uproar over the large amounts of money lost due to industrial espionage. A representative, speaking on behalf of the bill, articulated these concerns, stating that "American companies have faced the fact, unfortunately, that our laws were written so long ago that they do not deal with the protection of ideas in the way that they should"⁸⁵ This view was bolstered by the reported rise in trade secret thefts by other countries.

The effect of these crimes, it was believed, endangered the country's economic prosperity.⁸⁶ Making matters worse, Congress felt the existing system was inadequate to curtail these economic losses. Prior to the EEA's passage, federal prosecutors had no right to pursue someone under a theft of trade secret action, and state schemes were far more restrictive than the broad new act because most state civil schemes required the violator to acquire the trade secret through "improper means."⁸⁷

Sharp increases in cybercrime (crimes where computers play an intricate role) also presented analytical difficulties.⁸⁸ The earlier statutes that prosecutors had at their disposal (i.e., wire fraud, mail fraud, and trespass) were said to be inadequate to provide protection.⁸⁹ It was difficult for

⁸⁵ 142 CONG. REC. H 12137-01 (daily ed. Sept. 28, 1996) (statement of Rep. Lofgren).

⁸⁶ See Geraldine Szott Moohr, *The Problematic Role of Criminal Law in Regulating Use of Information: The Case of the Economic Espionage Act*, 80 N.C. L. REV. 853, 864 n.49 (2002). Moohr states that upon signing H.R. 3723 President William J. Clinton confirmed "that the ultimate purpose of the EEA is to safeguard the nation's security and economic strength by protecting the intellectual capital of American businesses." *Id.*

⁸⁷ See Aaron Burstein, *A Survey of Cybercrime in the United States*, 18 BERKELEY TECH. L.J. 313, 326 (2003).

⁸⁸ See *id.* at 315. ("Computer-based activities simply began to fall outside the act or mens rea requirements (or both) of mail and wire fraud, theft, and trespass. The result was 'an unsatisfying, result-oriented jurisprudence.'").

⁸⁹ This is exemplified by the decision in *United States v. Brown*, 925 F.2d 1301 (10th Cir 1991).

prosecutors to pursue criminal liability under the then-current law because they needed to “prove that the defendant’s actions deprived the owner of its property,”⁹⁰ which proved quite challenging. For example, in the *United States v. Seidlitz*⁹¹ a former military contractor stole a password to download valuable software from his former employer. The Fourth Circuit quickly concluded that the software was property.⁹² Yet Seidlitz merely *copied* the software, so his conduct did not actually deprive the employer of its copy of the software. As the federal wire fraud statute required a deprivation of another’s property, it was unclear how Seidlitz’s conduct could qualify as such.⁹³ Faced with these difficulties, “courts tended to reach results-oriented outcomes.”⁹⁴

Against this backdrop, the EEA breezed through Congress,⁹⁵ providing harsh penalties for those caught stealing trade secrets. By providing criminal relief, Congress helped move the basis for trade secret misappropriation liability deeper into the realm of property than ever before. In contrast to existing laws, the EEA liability scheme was steeped in a property rights approach. Simply proving that the defendant obtained the information through means that were unauthorized by the owner was enough.⁹⁶

Because the *actus reus* and *mens rea* elements are much easier to meet under the EEA than other statutes, such as the Copyrights Act,⁹⁷ prosecutors are more likely to use the EEA in many cases where the defendant’s alleged actions result in numerous overlapping federal charges. For example, under the

[D]efendant John Brown escaped prosecution under the National Stolen Property Act (NSPA) because Brown’s former employer had shipped the alleged trade secrets, a computer program and software manuals from a former employer, to Brown on backup tapes that Brown himself owned. The Tenth Circuit affirmed dismissal of the case, holding that the NSPA “applies only to physical ‘goods, wares or merchandise’ that were themselves ‘stolen, converted or taken by fraud.’”

Burstein, *supra* note 87, at 324 (internal citations omitted).

⁹⁰ See Burstein, *supra* note 87, at 315.

⁹¹ 589 F.2d 152 (4th Cir. 1978).

⁹² *Id.* at 160 (concluding that the information was “property” under the federal wire fraud statute).

⁹³ See Orin S. Kerr, *Cybercrime’s Scope: Interpreting “Access” and “Authorization” in Computer Misuse Statutes*, 78 N.Y.U. L. REV. 1596, 1610 (2003).

⁹⁴ *Id.* at 1611.

⁹⁵ See Joseph F. Savage, Jr. et al., *Trade Secrets: Conflicting Views of the Economic Espionage Act*, 15 CRIM. JUST. 10, 11 (2000).

⁹⁶ Burstein *supra* note 87, at 323–24.

⁹⁷ *Id.* at 325–26.

EEA, there is no need to prove copyright infringement, which can often prove difficult.⁹⁸ Furthermore, the definition of “theft” of a trade secret under the EEA is broader than the definition used in the Restatement Third, or UTSA. Both sections 1831 and 1832 allow for five categories of theft: (1) outright theft; (2) unauthorized duplication; (3) trafficking in stolen information; (4) attempting to commit these three offenses; and (5) conspiring to commit these three offenses.⁹⁹ Section 1832 does not even require the existence of an actual trade secret under the attempt and conspiracy theories.¹⁰⁰ Due to these lax standards, successful prosecutions under the EEA have been rapidly increasing in the last few years.¹⁰¹

Ultimately, developments in the common law, evidenced by *Kewanee*, *Monsanto*, and the Restatement Third, along with the passage of the EEA, leave no doubt that trade secret protection has been broadly extended. Furthermore, it is quite apparent that this expansion has benefited industry. Trade secret’s original intellectual foundation was replaced by the economic policy goals of classic forms of intellectual property, i.e., patent and copyright law. Yet it was not always this way. The next section will explain how trade secret law diverged from its original intellectual foundation and will illustrate the practical problems that result from the added protections built into the law.

III. TRADE SECRET LAW’S THEORETICAL DEVIATION FROM ITS ORIGINAL DOCTRINAL FOUNDATION AND PRACTICAL PROBLEMS WITH THE CURRENT FRAMEWORK

Although currently trade secret law is firmly entrenched in an intellectual property regime with property

⁹⁸ This is likely the reason that Robert Keppel, whom was accused of trade secret theft for selling Microsoft certification exams over the internet, was not charged with copyright infringement. See Press Release, CCIPS, *Former Vancouver, Washington, Resident Pleads Guilty to Theft of Trade Secrets from Microsoft Corporation* (Aug. 23, 2002), at <http://www.cybercrime.gov/keppelPlea.htm> (last visited Apr. 10, 2005).

⁹⁹ See 18 U.S.C. § 1831(a)(5) (2000) (“[C]onspires with one or more other persons to commit any offense described in any of paragraphs (1) through (3), and one or more of such persons do any act to effect the object of the conspiracy . . .”).

¹⁰⁰ See *United States v. Hsu*, 155 F.3d 189, 198 (3d Cir. 1998) (“[A]ttempt and conspiracy . . . do not require proof of the existence of an actual trade secret . . .”).

¹⁰¹ See UNITED STATES DEPARTMENT OF JUSTICE, *Computer Crime and Intellectual Property Section: Economic Espionage Act Cases*, at <http://www.cybercrime.gov/eeapub.htm> (last visited Apr. 20, 2005) [hereinafter DOJ, CCIPS: EEA Cases].

rights justified by an incentive-based rationale, the law was developed around the premise that property rights in trade secrets were created through the common-law “rule of capture.” Part III.A explores the theoretical deviation from trade secret law’s original doctrinal foundation and Part III.B describes the practical problems that have resulted therefrom.

A. *The Abandonment of Trade Secret’s Firm Foundation*

The current conceptualization of trade secrets as a form of intellectual property is fundamentally inconsistent with trade secret law’s original doctrinal foundation, which was based on the common-law rule of capture. To understand where the modern law has gone awry, it is necessary to start from the beginning. As Judge Robert H. Bork has eloquently explained, historical analysis is a powerful tool in exposing current legal misconceptions:

One of the uses of history is to free us of a falsely imagined past. The less we know of how ideas actually took root and grew, the more apt we are to accept them unquestioningly, as inevitable features of the world in which we move. [M]ost of us accept our first principles and even our intermediate premises uncritically, as given, because we assume that they were established theoretically and confirmed empirically by legislators and judges long ago.¹⁰²

1. From Common Law to the Restatement (First) of Torts: The Changing Face of Trade Secret Law

The concept of a trade secret as we know it first took root in the late 1830s¹⁰³ and sprouted into a judicially recognized right with the landmark 1868 opinion, *Peabody v. Norfolk*.¹⁰⁴ The plaintiff, Peabody, invented a new secret process for making gunny cloth from jute butts. Peabody employed Norfolk, who signed a written contract obligating him to keep the process secret. Norfolk later left Peabody’s employment and

¹⁰² ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 15 (1993).

¹⁰³ See *Vickery v. Welch*, 36 Mass. 523 (1837) (upholding the sale of the rights to the secret art of making chocolate).

¹⁰⁴ 98 Mass. 452 (1868). For a more in-depth discussion of *Peabody*, see Bone, *supra* note 12, at 252-54. Bone, *supra* note 12, at 253 (citing *Peabody*, 98 Mass. at 457-58 (referring specifically to trademark law, patent law, and trade secret law)). Bone, *supra* note 12, at 253 (citing *Peabody*, 98 Mass. at 457-58 (referring specifically to trademark law, patent law, and trade secret law)).

used the secret process to build a competing factory with James Cook. Peabody sought an injunction against the continued operation of the new factory.¹⁰⁵ Among other defenses, Cook argued that his original agreement with Peabody was unenforceable because it was made in restraint of trade.

Rejecting Cook's argument, Justice Gray of the Massachusetts Supreme Court held Peabody's trade secret to be a property right that was not constrained by contractual doctrines. This property right, Gray explained, was rooted in the Lockean concept that Peabody's personal effort in enhancing the economic value of his business granted him a property right in his trade secret: "If a man establishes a business and makes it valuable by his skill and attention, the good will of that business is recognized by the law as property."¹⁰⁶ Gray explained the implications this general principle had for trade secret law:

If [a person] invents or discovers, and keeps secret, a process of manufacture, whether a proper subject for a patent or not, he has not indeed an *exclusive right* to it as against the public, or against those who in good faith acquire knowledge of it; but he has *property* in it, which a court of chancery will protect against one who in violation of contract and breach of confidence undertakes to apply it to his own use¹⁰⁷

Although the court spoke of a "property" right, it had difficulty applying traditional property concepts—developed with respect to tangible property—to the intangible object of information. During this Natural Law period some judges and theorists explained this difficulty away by utilizing a Lockean conception of property for intangible ideas.¹⁰⁸ John Locke theorized that property rights originated in individual labor and the productive use of property.¹⁰⁹ The concept of property during the late nineteenth century was explicitly linked to this

¹⁰⁵ See Bone, *supra* note 12, at 252-53.

¹⁰⁶ *Peabody*, 98 Mass. at 457. This broad principle was "clearly intended . . . to unify all branches of what is today known as 'intellectual property law.'" Bone, *supra* note 12, at 253 (citing *Peabody*, 98 Mass. at 457-58 (referring specifically to trademark law, patent law, and trade secret law)).

¹⁰⁷ *Peabody*, 98 Mass., at 457-58 (emphasis added).

¹⁰⁸ See Bone, *supra* note 12, at 254.

¹⁰⁹ See JOHN LOCKE, SECOND TREATISE OF CIVIL GOVERNMENT 17-18 (Bobbs-Merrill ed. 1952) (1690) ("Whatsoever then [a person] removes out of the state that nature has provided and left it in, he has mixed his labor with, and joined to it something that is his own, and thereby makes it his property.")

Lockean concept of labor and physical possession.¹¹⁰ The notion was that the first possessor received property rights as a reward for their labor.¹¹¹ Modern economic arguments, such as the incentive-based argument currently advanced for trade secrets had not been developed.¹¹²

Of all the “bundle” of rights associated with property ownership, the concept of exclusivity was the most difficult to apply. The terminology used by the court in *Peabody* illustrates this confusion. While the court stated that the owner of a trade secret had a “property” right in his manufacturing process, the right was said not to be “exclusive to [the holder] as against the public.”¹¹³ In other words, the trade secret owner did not possess one of the most important sticks in the bundle of property rights—the right to exclude.

To account for this deficiency, ambitious courts attempted to rationalize property rights in intangible ideas by analogizing them to the common-law rule of capture.¹¹⁴ The analogy between ideas and animals ran deep.¹¹⁵ Just as animals were captured through physical labor and protected only to the extent that they remained confined, ideas were captured through discovery and protected only to the extent that they remained secret.¹¹⁶ If the secret escaped, then it became public property. Thus the only way to maintain one’s property rights in information at common law was to keep it secret. This was a direct extension of the generally accepted Lockean concept of just-deserved rights, and was therefore well received. In 1904, the Second Circuit, in *Werckmeister v. American Lithographic Co.*, described this common-law reasoning as follows:

[Ideas] are as free as the birds of the air or the wild beasts of the forest, but they belong to him who first reduces them to captivity. . . .

¹¹⁰ See *Ghen v. Rich*, 8 Fed. 159, 161 (D. Mass. 1881) (attaching the right of property in a whale to the first person that shoots the whale with a distinctively marked harpoon); *Pierson v. Post*, 3 Cai. R. 175, 177-78 (N.Y. Sup. Ct. 1805) (attaching property in a fox to the first person bringing it under control, articulating the well-known “capture rule”).

¹¹¹ See SINGER, *supra* note 47, at 16-18. For an argument in favor of this rule see generally Richard Epstein, *Possession as the Root of Title*, 13 GA. L. REV. 1221 (1979).

¹¹² See Bone, *supra* note 12, at 253.

¹¹³ *Id.* at 253.

¹¹⁴ *Id.* at 254.

¹¹⁵ This analogy was expressly made in the common-law copyright case of *Werckmeister v. American Lithographic Co.*, 134 Fed. 321, 324 (2d Cir. 1904), which is quoted *infra* text accompanying note 117.

¹¹⁶ Bone, *supra* note 12, at 255.

To pursue the foregoing analogies, the common-law protection continues only so long as the captives or—creations are kept in confinement or controlled.¹¹⁷

Hence, during these formative years, all branches of intellectual property law were conceptualized through the “rule of capture.” At common law, exclusive possession was necessary for property rights to attach.¹¹⁸ These common-law principles, in turn, applied to all forms of information: “possession” of information required both discovery and exclusion through secrecy. Once the information found its way into the commons, though, the property right disappeared and instead was owned communally.¹¹⁹

It is at this point that trade secret law diverged from other forms of intellectual property law—to wit, patent and copyright law. While trade secret law remained a creature of a common-law system that did not protect information once it became public, the early Patent and Copyright Acts protected the ideas when they were released into the public. It was reasoned that since the ideas were now “public property,” it was up to the public to enact protective legislation.¹²⁰ Yet unlike patent and copyright law, no statutes were passed to protect trade secrets once they entered the public domain.

This extra layer of statutory protection afforded to a copyright owner by virtue of statutory right is exemplified by *Werckmeister*. In *Werckmeister*, the common-law copyright principles allowed for the creator to release his “captured” ideas first, but did not protect the ideas once they were let free—it only protected the copyrighted material *prior* to its publication.¹²¹ But, because there was a statute involved, the court explained that subsequent public dissemination did not destroy the creator’s property rights: “[t]he *statute* permits [the ideas] to go free and releases the restraint, provided the owner has stamped them with his brand.”¹²²

¹¹⁷ *Werckmeister*, 134 Fed. at 324.

¹¹⁸ See Bone, *supra* note 12, at 254.

¹¹⁹ See *id.* at 255 (citing *Hamilton Mfg. Co. v. Tubbs Mfg. Co.*, 216 F. 401, 407 (W.D. Mich. 1908) (“The property in a secret process is the power to make use of it to the exclusion of the world. If the world knows the process, then the property disappears.”) (quoting *Cincinnati Bell Foundry Co. v. Dodds*, 10 Ohio Dic. Reprint 154 (1887))).

¹²⁰ See Bone, *supra* note 12, at 255.

¹²¹ *Werckmeister*, 134 Fed. at 324.

¹²² *Id.*

During these formative years, the common-law principles that protected an owner's interest in intangible ideas *prior* to publication were consensually viewed as superior to the post-publication statutory protections.¹²³ While common-law schemes were firmly rooted in the historically and culturally accepted Lockean concept of just-deserved rights, statutes were viewed simply as "expressions of historically and culturally contingent social policy"¹²⁴ whose added protections granted to copyright and patents through statute were not viewed as firmly rooted. In fact, it was thought that trade secret law's strong link to the common law made it a superior method of protection to the post-publication protections afforded through the statutory patent and copyright schemes.¹²⁵ Hence, at this stage trade secret law had a firm foundation of policy grounded in these common-law concepts.

With the advent of legal realism, however, courts and scholars abandoned this firm basis.¹²⁶ Around the early 1920s the age of legal realism brought an entirely new and more "modern" conceptualization of trade secret protection.¹²⁷ The change in legal philosophy undermined the common-law property rights approach of the late nineteenth and early twentieth centuries. Especially weakened was the claim "that exclusivity through secrecy implied property and that property implied legal rights [in trade secrets]"¹²⁸ During this period, the basis for liability stemmed not from the defendant's violation of the holder's property right granted at common law, but instead was based on the wrongfulness of the defendant's conduct. This new approach focused on the relationship between the trade secret holder and the alleged wrongdoer. In

¹²³ See Bone, *supra* note 12, at 256 ("These statutory rights were treated as subordinate to common-law property rights . . .").

¹²⁴ *Id.* (citing 1 J. POMEROY, A TREATISE OF EQUITY JURISPRUDENCE §§ 90-110 (1881); Robert G. Bone, *Mapping the Boundaries of a Dispute: Conception of Ideal Lawsuit Structure from the Field Code to the Federal Rules*, 89 COLUM. L. REV. 1, 9-26 (1989); Robert G. Bone, *Normative Theory and Legal Doctrine in American Nuisance Law: 1850 to 1920*, 59 S. CAL. L. REV. 1101, 1112-22 (1986)).

¹²⁵ Bone, *supra* note 12, at 256.

¹²⁶ *Id.* at 259-60.

¹²⁷ See *id.* at 259 (citing ROBERT SUMMERS, INSTRUMENTALISM AND AMERICAN LEGAL THEORY (1982); WILLIAM TWINING, KARL LLEWELLYN AND THE REALIST MOVEMENT (1973); G. Edward White, *From Sociological Jurisprudence to Realism: Jurisprudence and Social Change in Early Twentieth-Century America*, 58 VA. L. REV. 999 (1972)).

¹²⁸ Bone, *supra* note 12, 259.

E.I. duPont deNemours Powder Co. v. Masland,¹²⁹ Justice Holmes encouraged this view:

Whether the plaintiffs have any valuable secret or not the defendant knows the facts, whatever they are, through a special confidence that he accepted. The property may be denied but the confidence cannot be. Therefore the starting point for the present matter is *not property* or due process of law, but that the defendant stood in *confidential relations* with the plaintiffs¹³⁰

In his explanation, Justice Holmes clearly stated that the starting point of analyzing liability for the misappropriation of secret information was “not property,” but the “confidential relations” shared by the parties.¹³¹ This approach effectively changed how secret information was protected under the law of trade secrets. This evolution in trade secret law shifted the legal framework from common-law property rights, which focused upon the rights which attached to the plaintiff’s secret, to a new theory that focused upon the wrongful conduct of the defendant. Essentially, the property rights rationale was abandoned and the basis of liability was now closer to contract and tort law; liability hinged on whether the wrongdoer had violated a confidence, not a property right.

At this point, courts and scholars alike rebuked the idea that the owner of a trade secret had a property interest in that secret. In 1938, the Restatement (First) of Torts, which contained the first-ever unified definition of a trade secret, reported that the property conception “has been frequently advanced and rejected.”¹³² Instead, the Restatement (First) of Torts explained that the theory of liability rested upon “a general duty of good faith.”¹³³ No longer was it thought necessary to define a trade secret holder’s right as a property interest. Professor Handler summed up the feeling of the era nicely: “For one to reap with impunity the fruits of another’s labor may be reprehensible, but the creation of new species of property interests and new series of monopolies by the courts may be disastrous to free enterprise.”¹³⁴ Hence, the idea of property rights in trade secrets were not only abandoned, but altogether denounced.

¹²⁹ 244 U.S. 100 (1917).

¹³⁰ *Id.* at 102.

¹³¹ *Id.*

¹³² RESTATEMENT (FIRST) OF TORTS § 757 cmt. a (1939).

¹³³ *Id.*

¹³⁴ Milton Handler, *Unfair Competition*, 21 IOWA L. REV. 175, 189 (1936).

This new conceptualization of trade secrets presented a problem. The new theoretical model deviated from trade secret's original foundation, and remained unconvincing. The law no longer possessed the strong foundation upon which to rest its policy that it had during the late nineteenth and early twentieth centuries.¹³⁵ No longer did trade secrets possess a strong "justifying theory and . . . normative independence from other fields of law."¹³⁶ Instead, trade secrets were now protected by forbidding the wrongful conduct of another, just like contract or tort law. Yet the property-like characteristics of trade secrets, such as the ability to assign the secret, or its use as the *res* of a trust, made for an imperfect fit. The stripping away of trade secret's common-law property foundation left a gap that courts and scholars have been trying to fill ever since.¹³⁷

In the 1970s and 1980s the Supreme Court attempted to fill this gap by adopting the policy goals for trade secrets that are commonly articulated to support more traditional forms of intellectual property, such as copyright and patent law.¹³⁸ As the following section will illustrate more thoroughly, this too was an imperfect fit. The deviation from trade secret law's original framework is in large part responsible for the unpromising current state of the law.

In sum, trade secret law has been struggling to find a satisfactory framework and rationale after the collapse of its original theory. Liability was first grounded in a property rights rationale supported by the rule of capture. As legal concepts changed, liability was centered on the wrongful conduct to another and the concept of property rights was altogether dropped. As a result, trade secrets suddenly found a home in the Restatement (First) of Torts—an area of the law where it did not quite fit. Then, trade secrets were analogized to more traditional forms of intellectual property when the Supreme Court adopted the economic incentive-based argument used to support the existence of patent and copyright laws. As the following section will illustrate, this too was inappropriate.

¹³⁵ Bone, *supra* note 12, at 260.

¹³⁶ *Id.*

¹³⁷ *Id.* at 260 n.90 (setting forth the major attempts by courts and commentators to justify trade secret law, including the idea of "unfair competition," which was quite popular in the first half of the twentieth century).

¹³⁸ See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974).

2. An Unfit Rationale—Trade Secrets are Different

The above historical tour reveals that, despite the Court's current treatment of trade secret law as a form of intellectual property, the fit is quite poor. Trade secrets are different. The incentive-based policy rationale adopted in *Kewanee* does not fit trade secrets, as the *quid pro quo* of public disclosure does not exist. The policy rationales do not at all explain the need for protecting trade secrets as property. Furthermore, as a practical matter, the added protections built into the law through the EEA create a powerful tool for industry to exclude valuable discoveries from society, further imperiling the future of innovation.

First, and foremost, the economic policy rationale that trade secrets enhance incentives to create, thereby benefiting society, is unconvincing. This incentive-based argument "is well established as the principal economic justification for intellectual property rights in general."¹³⁹ While the argument is compelling for both copyright and patent law, it is a very difficult sell with trade secret law. Even the scholars of the legal realism era that abandoned trade secret's original firm basis recognized the danger of an explicitly economic justification. Indeed, the Restatement (First) of Torts expressly rejected this incentive-based rationale:

The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret.¹⁴⁰

The Court in *Kewanee* also admitted that it is difficult to reconcile the secret element of trade secret law with the disclosure of patent law, which is "the *quid pro quo* of the right to exclude."¹⁴¹ The Court reasoned convincingly that in most cases where trade secrets operate, the "law will encourage invention in areas where patent law does not reach, and will

¹³⁹ Bone, *supra* note 12, at 262 (citing ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 112-16, 135-49 (1988)); see also William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEG. STUD. 325-63 (1989) (applying the incentive-based argument to copyright); Kenneth W. Dam, *the Economic Underpinnings of Patent Law*, 23 J. LEG. STUD. 247 (1994) (applying the incentive-based argument to patent law).

¹⁴⁰ RESTATEMENT (FIRST) OF TORTS § 757 cmt. b (1939).

¹⁴¹ *Kewanee*, 416 U.S. at 484 (emphasis added).

prompt the independent innovator to proceed with the discovery and exploitation of his invention.”¹⁴² But it is when the inventor has a choice between using patent law and trade secret law where the Court’s reasoning is highly questionable. The majority argued that “[t]he possibility that an inventor who believes his invention meets the standards of patentability will sit back, rely on trade secret law, and after one year of use forfeit any right to patent protection . . . is remote indeed.”¹⁴³

The majority’s baseless assumption that an inventor would rarely rely on trade secret law in place of patent law was highly questionable then, and downright wrong now. Both Justice Marshall’s concurrence and Justice Douglas’ dissent called into question the majority’s key assumption in this area. Justice Marshall agreed with the Court’s decision that trade secret law was not in conflict with federal patent law, but he believed “that the existence of trade secret protection provide[d] . . . in some instances a substantial disincentive to entrance into the patent system, and thus deprives society of the benefits of public disclosure of the invention which it is the policy of the patent laws to encourage.”¹⁴⁴ Justice Douglas’ dissenting opinion argued that trade secret law did in fact frustrate federal patent law’s objectives. As such, Douglas argued that the majority’s reasoning ran contrary to two of the Court’s earlier decisions; accordingly, he believed the state trade secret law regime was preempted by the federal patent scheme.¹⁴⁵

This area of tension between trade secrets and the policy goals of patent law, highlighted by Justices Douglas and Marshall, has grown even tauter today. Patent and copyright owners receive their property rights in exchange for disclosure

¹⁴² *Id.* at 485.

¹⁴³ *Id.* at 490.

¹⁴⁴ *Id.* at 494 (J. Marshall, concurring).

¹⁴⁵ Justice Douglas argued:

Today’s decision is at war with the philosophy of *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225 and *Compco Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234. We held that when an article is unprotected by a patent, state law may not forbid others to copy it, because every article not covered by a valid patent is in the public domain. Congress in the patent laws decided that where no patent existed, free competition should prevail; that where a patent is rightfully issued, the right to exclude others should obtain for no longer than 17 years, and that the States may not “under some other law, such as that forbidding unfair competition, give protection of a kind that clashes with the objectives of the federal patent laws[.]”

Id. at 495 (J. Douglas, dissenting).

to society. With trade secret law, this disclosure could theoretically never take place. It is this area of tension that runs contrary to the second stated policy rationale of trade secret law: “encourag[ing] creation” for the betterment of society as a whole.¹⁴⁶ The argument that society loses little in the process may hold merit when it comes to trade secrets such as advertising campaigns, customer lists and business methods, but it runs contrary to the policy of public disclosure when it comes to patentable items of invention, processes, procedures and techniques that would benefit society. The rarity in which an occasion like this was thought to occur may explain the Court’s decision at the time, but it definitely calls into question whether providing a property right to the holder is justified if these occasions become increasingly common. With the numerous added protections currently built into the law, the incentive to keep an invention a trade secret, where disclosure could theoretically never take place, has increased tremendously.

Furthermore, the first policy rationale articulated by the Court in *Kewanee*—that trade secret law encourages commercial ethics—is not a convincing reason to supply property rights. This policy rationale is justified as protecting the traditional community norms that have developed over time. But as one commentator laments, this justification sounds more like “lofty aspirational goals” than a workable framework of law.¹⁴⁷ Moreover, it is not necessary to create a property right to safeguard commercial norms. As Justice Holmes explained, liability may be predicated on a tort or contract theory that imposes liability based on a defendant’s wrongful conduct.¹⁴⁸ The idea that trade secret law encourages commercial ethics appears to be more of an added benefit to protecting interests in trade secrets than it is an actual rationale for protecting them as “property.” Hence, the

¹⁴⁶ See *Kewanee* 416 U.S. at 481.

¹⁴⁷ Chiappetta, *supra* note 17, at 86.

¹⁴⁸ Justice Holmes argued for a rationale based more upon a contract or tort theory, where liability was based upon the violation of a confidence. He famously stated:

Whether the plaintiffs have any valuable secret or not, the defendant knows the facts, whatever they are, through a special confidence that he accepted. The property may be denied but the confidence cannot be. Therefore the starting point for the present matter is not property or due process of law, but that the defendant stood in confidential relations with the plaintiffs

E.I. duPont deNemours Powder Co. v. Masland, 244 U.S. 100, 102 (1917).

Monsanto decision, which recognized trade secrets as property under the takings clause of the Fifth Amendment, is not supported by these poorly developed rationales.

Monsanto's faulty reasoning is further evidenced by the fact that the Court was forced to revert to formalistic notions of property to justify granting a property right to Monsanto.¹⁴⁹ The Court used language that harped back to the formalistic rule of capture analysis from the late nineteenth century, utilizing the natural rights concept of “just deserved” property rights through “labour.”¹⁵⁰ This is telling because it indicates that property rights in trade secrets cannot rest squarely upon the economic justification explicitly expressed for trade secret law, and borrowed from traditional forms of intellectual property, i.e., copyright and patent law. In addition, this incentive-based economic rationale leads many towards the mistaken belief that trade secret law is simply another form of intellectual property. The reality, as one commentator so simply stated, is quite the opposite: “Trade secret law is fundamentally different.”¹⁵¹

The recognition of a property right in trade secrets has attracted much controversy. One commentator has opined that trade secret law “is merely a collection of other legal norms—contract, fraud, and the like—united only by the fact that they are used to protect secret information.”¹⁵² Indeed, “[t]he relational focus of trade secret’s liability rules aligns trade secret law more closely with the law of contract than with the law of property.”¹⁵³ Hence, a property right in trade secrets is arguably altogether unnecessary, as other legal theories, such as contract and tort law, possess all the tools necessary to protect against the misappropriation of ideas.

Yet despite the problems noted above, trade secret law expanded on the criminal front without attempting to sort through the doctrinal morass. The EEA, passed to benefit industry, is essentially a canon being used to kill a mosquito. Scholars complain that the over-broad language remedied the ills of industrial espionage too thoroughly.¹⁵⁴ For example,

¹⁴⁹ See text accompanying notes 61-62.

¹⁵⁰ See *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1003 (1984); see also text accompanying note 62.

¹⁵¹ Bone, *supra* note 12, at 244.

¹⁵² *Id.* at 245.

¹⁵³ *Id.* at 244.

¹⁵⁴ See, e.g., Moohr, *supra* note 86, at 884; Burstein, *supra* note 87, at 326.

Professor Moohr argues that the EEA's expansive definition of trade secrets expands the range of protected material so much so that it "raises constitutional vagueness and notice issues."¹⁵⁵ Professor Burstein argues that this expansion creates an incentive for prosecutors to utilize the EEA rather than other federal criminal statutes because the elements are much easier to make out.¹⁵⁶

Until 1996, trade secret law was solely developed and cultivated under state law. As rationales justifying trade secrets shifted back and forth in the courts and Restatements,¹⁵⁷ Congress was curiously indifferent. Although large sections of the United States Code are dedicated to patent¹⁵⁸ and copyright law,¹⁵⁹ federal legislation has only come recently in the law of trade secrets and is quite sparse.¹⁶⁰ Yet as the tendency to analogize trade secrets to other forms of intellectual property increased, Congress's indifference was intriguingly replaced with fervor to strengthen a law that was already sorely misunderstood.

What is extremely troubling about the EEA is that legislative history shows absolutely no evidence of a substantive discussion of how the EEA would interact with trade secret law's stated policy goal of encouraging innovation for the benefit of society.¹⁶¹ Rather, the committee reports and floor debates illustrate the one-sided, pro-business nature of the EEA. Indeed, Congress did not hear any testimony from experts in the intellectual property field. In fact, all of the testimony was given by self-interested industry experts.¹⁶² The result is a law that has received much criticism from scholars,¹⁶³ while providing extremely strong protections for industry.

¹⁵⁵ Moohr, *supra* note 86, at 884.

¹⁵⁶ Burstein, *supra* note 87, at 325-26.

¹⁵⁷ See *supra* Part II.A.

¹⁵⁸ The entirety of Title 17 is dedicated to Copyright Law. See Copyright Act, 17 U.S.C. §§ 101-1301 (2000).

¹⁵⁹ The entirety of Title 35 is dedicated to Patent Law. See Patent Act, 35 U.S.C. §§ 1-331 (2000).

¹⁶⁰ See Economic Espionage Act, 18 U.S.C. §§ 1831-39 (2000).

¹⁶¹ See Craig L. Uhrich, *The Economic Espionage Act—Reverse Engineering and the Intellectual Property Public Policy*, 7 MICH. TELECOMM. & TECH. L. REV. 147, 171 (2001) (citing H.R. Rep. No. 104-788, at 4-8 (1996)) (discussing the importance of proprietary information and the inadequacy of state civil remedies); S. Rep. No. 104-359, at 5-12 (1996) (adding reports of the increasing incidence of economic espionage and a discussion of the need for a comprehensive federal law).

¹⁶² See Uhrich, *supra* note 161, at 170-71.

¹⁶³ See, e.g., *id.*; Moohr, *supra* note 86, at 884.

Ultimately, the current trade secret scheme is deeply entrenched in a property right regime, but the policy goals currently supporting the law do not fit. Not only has this new theoretical model deviated from trade secret's original foundation, but also as a practical matter, the added protections built into the law have effectively swung the pendulum directly towards the interests of industry. As will be shown in the next section, this current theoretical framework has the unfortunate consequence of constricting socially beneficial innovation.

B. Practical Problems with the Current Trade Secret Framework: De Facto Monopolies and Collective Action Dilemmas

As trade secret holders enjoy the added protections built into the law, society suffers as the law's tendency to strangle innovation increases. In particular, owners of chemical inventions may enjoy de facto monopolies in their ideas because they are usually impossible to reverse engineer. Constricting the free-flow of information creates a collective action problem whereby inventors cannot build upon the ideas of others.

1. De Facto Monopolies: Inventions that are "Beneficial to Society" but Impossible to Reverse Engineer

Chemical inventions, which are extremely difficult to reverse engineer, can enjoy a much longer period of exclusive use if the inventor does not apply for a patent.¹⁶⁴ Daniel C. Munson, a chemical inventor and lawyer, argues that certain industrial inventions are better candidates for trade secret protection than others.¹⁶⁵ Whereas electrical or mechanical inventions are easily reverse engineered, as evidenced by the

¹⁶⁴ See Daniel C. Munson, *The Patent-Trade Secret Decision: An Industrial Perspective*, 78 J. PAT. & TRADEMARK OFF. SOC'Y 689, 699-702 (1996).

¹⁶⁵ See generally *id.* Ironically, Munson comes to the conclusion, despite his earlier contentions, that federal patent law does not preempt state trade secret law because patents are easier to obtain for chemical inventions than other types. Munson's conclusion appears inapposite to the weight of his paper, which enumerates the many reasons a chemical inventor would prefer trade secret protection. Furthermore, as trade secret law receives increased protection it is reasonable to conclude that it could become even more attractive to these same inventors.

legion of suits filed in the early 1990s involving semiconductor design, chemical compounds cannot be. Thus, as a practical matter, trade secret protection is impossible to maintain for mechanical or electric inventions, but almost assured for chemical formulae.¹⁶⁶ For example, the formula for Coca-Cola has never been reverse engineered, even though it has existed for well over a hundred years.¹⁶⁷ As one of the most well-known and profitable companies in the world,¹⁶⁸ the formula is undoubtedly a great target for reverse engineering. Nevertheless, not a single manufacturer has been able to duplicate it.

However, although the secrecy of a soft drink formula is hardly detrimental, suppression of information poses a very real problem when the nature of that information is socially beneficial. For example, suppose a company discovers a formula for a clean-burning fuel alternative, a product extremely difficult to reverse engineer. Further assume that the company is a subsidiary of an oil company. This company could either patent the technology and suppress it for twenty years,¹⁶⁹ or keep it as a trade secret. Given these two choices, a company would likely choose to go the trade secret route because, assuming the information could not be discovered independently, the company could effectively maintain indefinite and exclusive use of its invention. Nothing prevents that company from shielding the rest of the world from the benefits of that invention forever. In fact, federal criminal laws provide harsh sanctions for anyone who discloses the formula.¹⁷⁰

¹⁶⁶ See *id.* at 690–97.

¹⁶⁷ See The Coca-Cola Company at <http://heritage.coca-cola.com> (last visited Apr. 25, 2005). The drink was invented by John Pemberton, an Atlanta pharmacist, in 1886. *Id.* To this day, almost 120 years later, the formula has remained a secret.

¹⁶⁸ The aggregate market value of the common equity of the Coca-Cola Company as of June 30, 2004 was over \$105 billion. See The Coca-Cola Company, *United States Securities and Exchange Commission, Form 10-K*, available at http://www2.coca-cola.com/investors/pdfs/form_10K_2004.pdf (last visited May 11, 2005).

¹⁶⁹ This example is very similar to the actions taken by Standard Oil in 1929. “Once Standard Oil acquired [hydrogenation process] patent rights, it showed little interest in using the hydrogenation processes in production. Instead, it was more interested in blocking the threat that liquid fuels and coal lubricants posed to the oil industry.” Kurt M. Saunders, *Patent Nonuse and the Role of Public Interest as a Deterrent to Technology Suppression*, 15 HARV. J. L. & TECH. 389, 409 (2002).

¹⁷⁰ Under 18 U.S.C. § 1832(a)-(b) the maximum fine for individual offenders is \$ 250,000, the same as for mail and wire fraud. *Id.* § 3571(b) (providing the general fine provision). Penalties for violations that benefit foreign governments, instrumentalities, or agents carry a penalty for individuals of fines up to \$500,000 and imprisonment not

While current regulations already guide pharmaceutical products towards the law of patents,¹⁷¹ there are other areas of industry where beneficial inventions may be kept secret to the detriment of society forever.

The above example is not farfetched. Intellectual property has been utilized to shield the public from socially beneficial inventions in the past.¹⁷² Indeed, companies have often used intellectual property law as a means of withholding ideas that are beneficial to society, but harmful to their bottom line.¹⁷³ For example, in the 1960s Liggett & Myers Company discovered and patented¹⁷⁴ the “XA” cigarette, a cigarette with most of the carcinogenic agents removed. However, for various reasons, it was never released to the public and all of the research was suppressed.¹⁷⁵ Liggett finally announced plans to release the “safer” cigarette in 2001, after the tobacco industry finally admitted to the carcinogenic effects of smoking.¹⁷⁶ Had Liggett introduced the product sooner, many lives could have been spared. At the least, an earlier release of the XA cigarette would have spurred other cigarette companies to seek out similar developments. Instead, this knowledge was suppressed for many years.

This is just one of many examples of intellectual property rights being used to suppress ideas that could prove

more than fifteen years. *Id.* at § 1831(a). When the defendant is an organization, the fine may reach \$10 million. *Id.*

¹⁷¹ Due to strong public welfare concerns, the pharmaceutical industry is heavily regulated by the government. Extensive disclosure and testing is often required before a product is deemed approved for massive public release. Thus, trade secret law is a poor fit for protection here. *See* Munson, *supra* note 164, at 698 n.22.

¹⁷² *See, e.g.,* Saunders, *supra* note 169, at 392-93; Michael A. Gollin, *Using Intellectual Property to Improve Environmental Protection*, 4 HARV. J. L. & TECH. 193, 223 (1992).

¹⁷³ *See* Saunders, *supra* note 169, at 395-96.

¹⁷⁴ There can be no empirical data from the realm of trade secret law directly proving this premise because trade secrets are just that—secret. An example from patent law here illustrates that companies will suppress knowledge or developments if they could hurt their bottom line.

¹⁷⁵ *See* Saunders, *supra* note 169, at 393 (citing First Am. Compl., City & County of San Francisco v. Philip Morris, Inc. (N.D. Cal. 1996) (No. C-96-2090-DLJ), available at <http://stic.neu.edu/ca/sf/1stamcomplaint.htm> (last visited Apr. 27, 2005)).

The reasoning behind this was that admitting there could possibly be a safer cigarette would imply that existing cigarettes were in fact dangerous. Furthermore, Phillip Morris allegedly threatened retaliation if Liggett released information regarding smoking and health. *See id.* at 394.

¹⁷⁶ *See id.* at 394-95.

extremely beneficial to society but harmful to a company's bottom line.¹⁷⁷

2. Trade Secret Protection in Research Developments and Collective Action Dilemmas

A related problem to idea suppression occurs when trade secrets are granted for research developments in chemical compounds that are beneficial to society. Although, due to government regulations, an actual cure for cancer would need to be patented in order to be distributed publicly,¹⁷⁸ a discovery that constitutes a significant step towards that cure does not. This means that trade secrets will protect a broad array of information that does not formally qualify for patent protection.

As exemplified by the recent case of *Teller v. Teller*,¹⁷⁹ there is a rather low threshold for property rights to vest in a trade secret. In *Teller*, the Supreme Court of Hawaii had to decide precisely when a property right vested in a trade secret.¹⁸⁰ Mrs. Teller agreed that Mr. Teller's secret weather radio invention was created three months prior to their marriage, thus qualifying as "pre-marital property" under Hawaii law, and rendering the property "separate" for purposes of equitable distribution. The court reasoned that "one owns a property right in a trade secret when one knows of it"¹⁸¹ This means that a trade secret is certain to vest before the property right in a patent because under federal law the right in a patent accrues once it is issued by the Patent Office.¹⁸²

¹⁷⁷ For numerous other examples see *id.* at 407–17.

¹⁷⁸ Government regulations make disclosures mandatory, so that drugs can be tested and FDA approval can be issued prior to distribution. See 21 U.S.C. § 352(n). The section states in pertinent part:

In the case of any prescription drug distributed or offered for sale in any State [the following must be disclosed] . . . (2) the formula showing quantitatively each ingredient of such drug to the extent required for labels . . . , and (3) such other information in brief summary relating to side effects, contraindications, and effectiveness as shall be required in regulations which shall be issued by the Secretary in accordance with the procedure

Id.

¹⁷⁹ 53 P.3d 240 (Haw. 2002).

¹⁸⁰ *Id.*

¹⁸¹ *Id.* at 249 (quoting *DTM Research, LLC v. AT&T Corp.* 245 F.3d 327, 332 (4th Cir. 2001)).

¹⁸² See *id.* at 250 (citing *GAF Bldg. Materials Corp. v. Elk Corp. of Dallas*, 90 F.3d 479, 483 (Fed. Cir. 1996)).

Hence, the holder of a trade secret has a property right in that secret as soon as it is discovered.¹⁸³

Yet deciding that property rights vest from the moment of discovery harms innovation. Future innovators will not be able to learn from the crucial insights. Moreover, other firms will continue to research the same area, thus duplicating efforts.¹⁸⁴

A pending case being prosecuted by the U.S. Department of Justice—*United States v. Zhu*,¹⁸⁵ illustrates that research developments will be receiving protection under trade secret criminal laws. In June of 2002, a pair of research fellows at Harvard University were charged under the EEA for the theft of trade secrets from a Harvard laboratory.¹⁸⁶ It was alleged that the two stole proprietary and highly valuable scientific information belonging to Harvard with the intention of profiting from such information by collaborating with a Japanese company. The information in question was the derivative of two genes that blocked the activity of calcineurin. This genetic derivative possibly offered a way to treat a number of diseases affecting the immune, cardiovascular, and nervous systems.¹⁸⁷ Although the discoveries were made by the two research fellows being prosecuted, they signed a Participation Agreement that assigned all property rights to discoveries and inventions to Harvard. Furthermore, the two research fellows used the Harvard laboratory, which was funded in part by the National Health and the American Cancer Society, along with Harvard's information, technology and chemical reagents to discover the genes.¹⁸⁸

Although the behavior of the two research assistances appeared criminal, the case highlights the overly broad protection afforded to socially beneficial information. Critically, the information involved in this case was not easily reverse engineered and had the potential to benefit society greatly.

¹⁸³ See *id.* at 249. "This is an intensely fact-driven analysis because the moment at which an idea blossoms into a property right protected by statute will in large part, be dependent upon the content of the secret." *Id.*

¹⁸⁴ See Bone, *supra* note 12, at 266-67.

¹⁸⁵ See DOJ, *CCIPS: EEA Cases*, at <http://www.cybercrime.gov/eeapub.htm> (last visited Apr. 20, 2005).

¹⁸⁶ See Press Release, *CCIPS, Pair Charged with Theft of Trade Secrets from Harvard Medical School*, (June 19, 2002), at <http://www.cybercrime.gov/zhuCharges.htm> (last visited April 20, 2005).

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

Moreover, by bringing a criminal action, the government appeared to cast the EEA's protective net over information that was not in itself a complete product, but rather information that constituted a critical step to finding a cure. After all, the newly discovered genes may have been crucial parts of a process that could lead to cures for a number of diseases. Nonetheless, the consequences appear dire for the research fellows. Although the case has yet to be tried, acquittals are very rare under sections 1831 and 1832.¹⁸⁹

But protecting these ideas as property before an actual invention is fully realized risks potentially locking away valuable ideas that lead to larger discoveries forever. Economists refer to this as a collective action problem. An economic model known as game theory explores this concept.¹⁹⁰ A simple and often cited example to illustrate a collective action problem is the *Prisoner's Dilemma*:

Two criminals are arrested. They both have committed a serious crime, but the district attorney cannot convict either of them for this crime without extracting at least one confession. The district attorney can, however, convict them both on a lesser offense without the cooperation of either. The district attorney tells each prisoner that if neither confesses, they will both be convicted of the lesser offense. Each will go to prison for two years. If, however, one of the prisoners confesses and the other does not, the former will go free and the latter will be tried for the serious crime and given the maximum penalty of ten years in prison. If both confess, the district attorney will prosecute them for the serious crime but will not ask for the maximum penalty. They will both go to prison for six years.¹⁹¹

Although the best choice is for both to remain silent, the prisoners' inability to communicate with each other means that they will both likely choose the inferior option.¹⁹² A similar dilemma could very easily take place in the realm of trade secret law. Let us assume that there are two companies, A and B, which both employ scientists to search for a clean-burning alternative to gasoline. Scientist A will not make the discovery because he cannot find the missing link to his formula, which is otherwise almost complete. Scientist B has discovered this

¹⁸⁹ The Department of Justice has not lost many of their attempts to prosecute thus far under 18 U.S.C. §§ 1331 and 1332. See DOJ, *CCIPS: EEA Cases*, at <http://www.cybercrime.gov/eeapub.htm> (last visited Apr. 20, 2005).

¹⁹⁰ See generally Maxwell L. Stearns, *A Beautiful Mend: A Game Theoretical Analysis of the Dormant Commerce Clause Doctrine*, 45 WM & MARY L. REV. 1 (2003).

¹⁹¹ DOUGLAS G. BAIRD ET AL., *GAME THEORY AND THE LAW* 33 (1994).

¹⁹² See *id.*

missing link, but does not know how to apply it. This knowledge will be kept secret forever in hopes that Company A, where Scientist A works, will eventually discover the information that Scientist B already has. Company B will keep this discovery secret in the hope that it will one day make the discoveries that Company A already has. Since the current trade secret scheme encourages innovation through financial reward, creating an atmosphere of competition, these secrets must be kept at all costs in order to maintain a competitive advantage over the other firm. Scientists A and B cannot communicate because the information is the property of their respective companies and is protected by federal criminal statutes¹⁹³ as well as civil common-law systems. Consequently, the information could be held captive forever.

As Companies A and B continue researching and developing a clean-burning alternative to gasoline, both will be expending unnecessary time and money. However, if both companies were able to gain knowledge from the other through collective action, the clean-burning alternative to gasoline would be invented, and the two companies would share the patent rights. Therefore, as in the prisoner's dilemma, both companies would be better off if they were able to coordinate their actions. However they are not currently able to do so because of preclusive barriers to collective action.¹⁹⁴ The tools of game theory identify this problem and provide a framework for understanding the optimal regulation of information transferal.¹⁹⁵

Ultimately, the current trade secret framework discourages cooperation and has the potential to shield socially beneficial ideas from the public forever. De facto monopolies in socially beneficial ideas flip the constitutionally mandated policy goal of benefiting society on its head. Hence a change in the law of trade secrets is necessary in order to further the public's right to socially beneficial ideas.

¹⁹³ Under 18 U.S.C. § 1832(a)-(b) (2000) the maximum fine for individual offenders is \$250,000. *Id.* § 3571(b) (providing the general fine provision). Penalties for violations that benefit foreign governments, instrumentalities, or agents carry a penalty for individuals of fines up to \$500,000 and imprisonment not more than 15 years. *Id.* at §1831(a). When the defendant is an organization, the fine may reach \$ 10 million. *Id.* at § 1831(a)-(b)

¹⁹⁴ Albeit this is an extremely simplified hypothetical, yet "[t]he purpose of using economic tools to analyze legal problems is to build simple models that capture the forces at work." BAIRD ET AL., *supra* note 191, at 269.

¹⁹⁵ *Id.* at 268-69.

IV. SOLUTIONS TO THE ABOVE PROBLEMS: AN AFFIRMATIVE DEFENSE AND THE ENCOURAGEMENT OF COOPERATION

The current trend of protectionism in the law of trade secrets has swung the pendulum too far in the direction of industry. As a result, society is suffering. The current trade secret apparatus must be altered so that the crucial balance necessary to benefit both society and industry is struck. The following two solutions hope to aid in swinging the pendulum back in the direction of society to reach that balance. First, an affirmative defense should be created to encourage the disclosure of socially beneficial developments that are being suppressed from the public. Second, the government should encourage and seek out ways to facilitate cooperation within those particular industries engaged in the production of socially beneficial products.

A. *Creating an Affirmative Defense for Theft of Trade Secrets that are "Beneficial to Society"*

Where an invention or idea stands to benefit the health and wellbeing of society, that invention or idea must find its way into society. The law should not act to constrict such knowledge, but should instead encourage spreading it as rapidly as possible. This section proposes the EEA be amended to create an affirmative defense that requires a defendant show that the information he/she improperly disclosed or stole was being suppressed by the company and would be of great "benefit to society." This affirmative defense should also be utilized in civil actions for misappropriation.

In Part III.B.1 this Note discussed the XA cigarette as an example of the problems that patent suppression present. As a proposed solution to the patent suppression problem, Professor Saunders points to a compulsory licensing system "whereby a court would order a patentee that is not using its patent to license the patent to another who will make use of it."¹⁹⁶ Michael Gollin, a lawyer with a background in biochemical science, also points to mandatory licensing provisions as a possible solution to ideas with environmental implications being suppressed.¹⁹⁷ Gollin points to section 308 of

¹⁹⁶ Saunders, *supra* note 169, at 434.

¹⁹⁷ Gollin, *supra* note 172, at 223.

the Clean Air Act of 1970¹⁹⁸ as a good example of legislation that forces patent holders to license their technology under directed circumstances.¹⁹⁹ However, trade secrets do not fall under this provision.²⁰⁰ Gollin concludes that “[t]he treatment of trade secrets in the principal environmental statutes is inconsistent with promoting innovation.”²⁰¹

The difficulty with creating a mandatory licensing scheme for trade secrets is readily apparent. The most important element of the trade secret is secrecy. It is impossible to forcibly license something that you do not know exists. Hence, it is imperative that those inside be encouraged to divulge secrets that are of great benefit to society as a whole.

Creating an absolute affirmative defense to any trade secret theft or misappropriation action, could help to swing the pendulum back in the favor of society. The onus would be on the defendant to make out three elements: First, the defendant must prove the trade secret is extremely difficult to discover independently and reverse engineer; next, the defendant must show that the trade secret in question would perform a *valuable benefit to the health and wellbeing of society*; and finally, that the company was suppressing its discovery. Thus, once it is proven by the plaintiff or prosecution that the knowledge or invention in question is a trade secret, the burden of proof would be upon the defendant to prove the three elements of the affirmative defense.

The first element of the affirmative defense is: *The invention is extremely difficult to reverse engineer*. This element could be proven by expert testimony of scientists in the field. As discussed above, a large majority of these items are likely to be chemical inventions and formulas. Conversely, mechanical devices are unlikely to ever pass this first prong. A computer company’s source code (human-readable code in which software developers write programs) may also pass muster under this first prong, but would have great difficulty under the next.

Next, the defendant must prove that the invention in question *performs a valuable benefit to the health and*

¹⁹⁸ 42 U.S.C. § 7608 (2000).

¹⁹⁹ The section requires certain conditions to exist in order to mandate licensing: (1) The patented invention is needed to achieve emission limitations; (2) No alternative methods are available; and (3) The patent reduces competition or monopolizes it. *Id.*

²⁰⁰ Gollin, *supra* note 172, at 223.

²⁰¹ *Id.* at 234.

wellbeing of society. This will obviously be an area of strong contention. Exactly what is a “valuable benefit to the health and wellbeing of society,” and where should one draw the line? The goal here is to use the law as a tool to extract those inventions and formulas that are most beneficial to society while protecting those that have a more commercial purpose, such as a soft drink formula, or source code. It is difficult to formulate a rule that distinguishes between a product like a clean-burning alternative to gasoline and a soft-drink formula. On the one hand, it is necessary to balance industry’s interests in protecting its property rights in research and development; on the other, the health and wellbeing of society must be placed above the interest of industry. Hence, a balancing of these interests is necessary. The following are examples of inventions that should qualify under this analysis:

1. The invention has the ability to save lives on a grand scale.
2. The invention has the ability to protect the environment through directly or indirectly improving the quality of air, water, or other natural resources.
3. The invention has the ability to improve vastly the quality of a human life (e.g., a cure for blindness, or a formula that prevents breast cancer).

If the invention falls into one of the first three categories, one should next analyze the likelihood of the invention’s beneficial effect. If the beneficial effect upon society is highly likely, that invention should be deemed “beneficial to society.”

Finally, the defendant would need to show that the owner of the trade secret was suppressing the idea or invention. One must avoid allowing the improper disclosure of a trade secret where the owner was merely suppressing the secret for an innocuous reason, such as to improve upon the new development. Examining factors such as the length of delay and changes in the original development would aid in this analysis.

In sum, the three-element affirmative defense should aid in upholding the constitutionally mandated policy goal of “promot[ing] the Progress of Science and [the] useful Arts.”²⁰² By creating such a defense, trade secret owners would likely be

²⁰² See U.S. CONST. art. I, § 8, cl. 8; *see also* text accompanying notes 3, 72-79.

wary of suppressing knowledge that could benefit society because they would receive absolutely no remedy for its theft.

Although the solution above does not altogether fix the problem of important discoveries being shielded from the public, it does filter out those socially beneficial inventions that could be shielded forever. It also helps to reduce an employee's or scientific team's risk of being prosecuted or sued for attempting to take their unused knowledge and useful inventions elsewhere.

Admittedly, creating an affirmative defense may do little to encourage inventors to come forward when their ideas have been suppressed. One would have to be incredibly noble, or foolhardy, to risk imprisonment, civil sanctions, and litigation costs to ensure that their ideas found a way into the public domain. However, what we punish represents what we value as a society. Our laws define what we value as "good" in American life. Hence, creating an affirmative defense would also create an impetus as to what the law should be and, more broadly, what values society should encourage.

B. Encouraging Cooperation to Avoid Collective Action Dilemmas

The current trade secret scheme forbids cooperation among industry. The above discussion illustrates that this is an extremely poor way to encourage innovation, as new ideas build upon the ideas of others. To foster efficiency, the law should encourage cooperation to avoid the all too common problem illustrated in the prisoner's dilemma—inefficient results caused by a lack of information.

Legal scholars have recognized that these collective action problems can be solved through legal involvement. Indeed, a number of law and economic scholars at the University of Chicago argue that "[c]ollective action problems that fit the paradigm of the prisoner's dilemma present a possible case for legal intervention."²⁰³ These scholars are not alone; Professor Stearns uses game theory in arguing that the dormant Commerce Clause is in fact used as a judicial method to prevent states from enacting laws of mutual defection.²⁰⁴ That is to say, free trade—collective action—is mutually

²⁰³ BAIRD ET AL., *supra* note 191, at 34.

²⁰⁴ Stearns, *supra* note 190, at 86-87.

beneficial to all states, but individual states would likely create laws discriminating against each other and benefiting their own local interests but for the watchful eye of the Supreme Court.²⁰⁵

In *In re Sutter-Butte By-Pass Assessment No. 6*,²⁰⁶ the California Supreme Court was faced with a collective action problem involving the building of levees along areas subject to flooding. Individual landowners were likely to build levees in order to keep their land safe from floods; however, their action would threaten flooding elsewhere. The rational response of those across the stream would then be to build new and higher levees. This would have resulted in costs that were actually higher than if no levees were built at all.²⁰⁷ The court decided that “the only adequate method of preventing this result was the unification of the individualistic and antagonistic efforts . . . into one comprehensive coordinating plan looking toward the flood control of the river in its entirety.”²⁰⁸ Again, legal intervention created the optimum solution, thus reducing costs through avoiding a collective action problem.

Indeed, collective action was even used to maximize the efficiency of research and development efforts aimed at combating intense air pollution in the Los Angeles area. In 1988 the California legislature sought to drastically reduce the emissions of vehicles as quickly as possible.²⁰⁹ To accomplish this goal, the legislature sought cooperation among industry leaders in the field. Thus, the Auto/Oil Group was formed, consisting of three major auto manufacturers and fourteen major petroleum companies.²¹⁰ The group signed the Auto/Oil Cooperative Agreement, where each pledged that the results of their research would be made public and that none of the

²⁰⁵ *Id.* at 87 (describing the per se rule against facially discriminatory laws).

²⁰⁶ 191 Cal. 650, 655–56 (1923).

²⁰⁷ BAIRD ET AL., *supra* note 191, at 32.

²⁰⁸ 191 Cal. 650, 656 (1923).

²⁰⁹ See Scott H. Segal, *Fuel for Thought, Clean Gasoline and Dirty Patents*, 51 AM. UNIV. L. REV. 49, 55 (2001) (citing CAL. HEALTH & SAFETY CODE § 43018(a) (Deering 1995)).

²¹⁰ See *id.* “The ‘Big Three’ U.S. automakers agreed to develop information on how to reduce vehicle emissions ‘through improved gasoline formulations, alternative fuels and advances in automobile technology’” *Id.* at 55 n.51 (quoting UNOCAL, INC., AUTO/OIL STUDY PROVISIONS (2001), available at <http://www.unocal.com/rfgpatent/rfgao.htm> (last visited April, 20, 2005)).

companies would claim proprietary interests.²¹¹ In order to achieve the optimum results, the Group enlisted elements of contract law to assure cooperation.

A similar solution could prove beneficial in the law of trade secrets. Indeed, forcing cooperation as a system-wide remedy to trade secret research developments would be impossible to implement and equally impossible to regulate. Thus, a less hard-line approach is necessary. The common thread of the above examples is that they are all *ad hoc* collaborations necessitated by pressing problems common to a large group.

As has been illustrated above, there are areas of research and development that are particularly prone to idea suppression—for example, areas involving chemical compounds that are extremely difficult to reverse engineer. Research developments involving chemical compounds that are made in areas such as Diabetes, Cancer, and Cardio-vascular disease (to name but a few) are undoubtedly “beneficial to society.” Indeed, “[t]here has been a dramatic increase in the attention and resources devoted to partnership or collaborative approaches to public health goals in the US.”²¹² Many nations²¹³ and states²¹⁴ have formed united fronts and consortia to avoid duplicitous and wasteful medicinal research and encourage cooperation.

Congress must be more in tune with the realities of research when creating broad legal constructs such as the EEA, and leave room for cooperative efforts such as these among industry. As a whole, we must be receptive to voices of change. We must avoid being the lukewarm supporters of change that Machiavelli described half a millennium ago. If our

²¹¹ Unfortunately one of the members of the group, Unocal, took out patents on certain technologies, which has caused much controversy. For an excellent discussion of this, see generally Segal, *supra* note 209.

²¹² Paula M. Lantz et al., *Can Communities and Academia Work Together on Public Health Research? Evaluation Results from a Community-Based Participatory Research Partnership in Detroit*, 78 J. URB. HEALTH: BULL. N.Y. ACAD. MED. 495, 495 (2001), available at http://www.futurehealth.ucsf.edu/pdf_files/Lantz.pdf (last visited April 6, 2005).

²¹³ See, e.g., IRISH CANCER SOCIETY, at <http://www.irishcancer.ie> (last visited April 6, 2005); VICTORIAN BREAST CANCER RESEARCH CONSORTIUM INC., at <http://www.cancervic.org.au/cancer1/research/breastconsort.htm> (last visited April 6, 2005).

²¹⁴ See, e.g., LOUISIANA CANCER RESEARCH CONSORTIUM, at <http://www.lacrc.net> (last visited Apr. 6, 2005); NORTHERN INDIANA RESEARCH CONSORTIUM, at <http://www.nicrc.org> (last visited Apr. 6, 2005).

legal framework is to foster efficiency for the benefit of society, we must not be incredulous or fearful of sharing information, especially in areas that stand to benefit the health and wellbeing of society. Although competition undoubtedly encourages innovation, in certain circumstances, so does cooperation.

Admittedly, this solution falls short of the type of analysis necessary for properly forming a workable framework where trade secrets are shared at the most optimal of levels. The use of game theory, though, could aid economists in predicting what hypothetical companies are likely to do under various legal frameworks, and, thus, which frameworks would promote the greatest amount of innovation.²¹⁵ Yet the purpose of this Note is not so much to propose an exact solution as it is to invite dialogue on this area of the law.

CONCLUSION

Ultimately, the forces Machiavelli described continue to shape our world of innovation. The current trend of protectionism has swung the pendulum too far in the direction of industry. In order to balance the scales there is a need for action. The proposed solutions advanced in this Note hope to encourage the sharing of ideas that truly benefit society most. By adding an affirmative defense that effectively strips away any trade secret rights an owner possesses, the law would be taking a step towards encouraging patenting and the limited monopoly that comes with it. By encouraging and seeking out ways to facilitate cooperation among industries that invent particularly beneficial products, the law would be encouraging a more optimal framework in which to operate. The two problematic areas that have been pointed out are not exhaustive, and the proposed solutions to those problems are by no means absolute. They are merely a starting point.

The pendulum must swing back in the favor of society in order for trade secret law to serve the constitutionally mandated policy goals that intellectual property laws purport to serve. In order to understand best how the law of trade secrets frames the actions of industry and innovation, we must begin to analyze areas that have gone untested for years. We must work hard to strike a balance when history tells us those

²¹⁵ See BAIRD ET AL., *supra* note 191, at 268.

in control will do whatever possible to remain there. Thus, I conclude with the hope that this Note encourages the reader to question the current trend of expanding protection in trade secrets and intellectual property as a whole. While I cannot provide a comprehensive solution to the complex problems discussed in this Note, questioning increased protection in this area of the law is nonetheless a good starting point. Indeed, the future of innovation depends on it.

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